

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1 - 17. (Canceled)

1 18. (Currently amended): A method of sharing data in a computer system,
2 said computer system comprising a first computer, a second computer, and a storage system
3 comprising a disk control unit, a first disk unit, a second disk unit, and a third disk unit, the
4 method comprising:

5 forming a first duplex state between said first disk unit and said second disk unit,
6 wherein said disk control unit, in response to a write request from said first computer, stores
7 write data associated therewith to both said first disk unit and to said second disk unit, wherein
8 said disk control unit, in response to a write request from said second computer, stores write data
9 associated therewith to said third disk unit;

10 forming a simplex state, wherein said disk control unit, in response to a write
11 request from said first computer, stores write data associated therewith only to said first disk
12 unit, wherein said disk control unit, in response to a write request from said second computer,
13 stores write data associated therewith to said second disk unit; and

14 forming a second duplex state between said first disk unit and said third disk unit,
15 wherein said disk control unit, in response to a write request from said first computer, stores
16 write data associated therewith to both said first disk unit and to said third disk unit, wherein said
17 disk control unit, in response to a write request from said second computer, stores write data
18 associated therewith to said second disk unit.

19 subsequent to said step of forming a simplex state, re-mapping a disk identifier,
20 said second computer using said disk identifier to access said storage system,

21 wherein said disk identifier is associated with said third disk unit before said re-
22 mapping and said disk identifier is associated with said second disk unit after said re-mapping,

23 ~~whereby said third disk unit is accessed when said second computer accesses said storage system~~
24 ~~at a time prior to said re-mapping and said second disk unit is accessed when said second~~
25 ~~computer accesses said storage system at a time subsequent to said re-mapping.~~

1 19. (Currently amended): A method of sharing data according to claim 18,
2 further comprising forming a simplex state subsequent to forming said second duplex state,
3 wherein said disk control unit, in response to a write request from said first computer, stores
4 write data associated therewith only to said first disk unit, wherein said disk control unit, in
5 response to a write request from said second computer, stores write data associated therewith to
6 said third disk unit., subsequent to said step of re-mapping, forming a duplex state between said
7 first disk unit and said third disk unit.

1 20. (Currently amended): A method of sharing data in a computer system,
2 said computer system comprising a first computer, a second computer, and a storage system
3 comprising a disk control unit, a first disk unit, a second disk unit, a third disk unit, and a fourth
4 disk unit, the method comprising:

5 forming a duplex state between said first disk unit and said second disk unit,
6 wherein said disk control unit, in response to a write request from said first computer, stores
7 write data associated therewith to both said first disk unit and to said second disk unit, wherein
8 said disk control unit, in response to a write request from said second computer, stores write data
9 associated therewith to said fourth disk unit;

10 forming a simplex state, wherein said disk control unit, in response to a write
11 request from said first computer, stores write data associated therewith only to said first disk
12 unit; and

13 subsequent to said step of forming a simplex state, copying data stored in said
14 second disk unit to said third disk unit and subsequent to said copying then said disk control unit
15 accesses said third disk unit in response to I/O requests from said second computer. re-mapping a
16 disk identifier, said second computer using said disk identifier to access said storage system,

17 wherein said disk identifier is associated with said fourth disk unit before said re-
18 mapping and said disk identifier is associated with said third disk unit after said re-mapping,

19 ~~whereby said fourth disk unit is accessed when said second computer accesses said storage~~
20 ~~system at a time prior to said re-mapping and said third disk unit is accessed when said second~~
21 ~~computer accesses said storage system at a time subsequent to said re-mapping.~~

1 21. (Currently amended): A method of sharing data according to claim 20,
2 wherein said step of copying data includes steps of:

3 converting a first data format of data stored in said second disk unit to a second
4 data format; and

5 storing said data according to said second data format to said fourth disk unit.

1 22. (Previously presented): A method of sharing data according to claim 21,
2 wherein said first data format is a count key data format and said second data format is a fixed-
3 length block format.

1 23. (Previously presented): A method of sharing data according to claim 20,
2 wherein said computer system further comprises a processor coupled to said storage system, and
3 said step of copying data is performed by said processor.

24-26. (Canceled)

1 27. (Currently amended): A method of sharing data in a computer system,
2 said computer system comprising a first computer, a second computer, a first storage system
3 coupled to said first computer and comprising a first disk unit and a first disk control unit, and a
4 second storage system coupled to said second computer and comprising a second disk unit, a
5 third disk unit, a fourth disk unit, and a second disk controller unit, wherein said first disk control
6 unit and said second disk control unit are coupled via a network, the method comprising steps of:

7 copying data stored in said first disk unit to said second disk unit via said
8 network;

9 forming a duplex state between said first disk unit and said second disk unit,
10 wherein said first disk control unit, in response to a write request from said first computer, stores
11 write data associated therewith to both said first disk unit and to said second disk unit, wherein

12 said second disk control unit, in response to a write request from said second computer, stores
13 write data associated therewith to said fourth disk unit;

14 forming a simplex state, wherein said first disk control unit, in response to a write
15 request from said first computer, stores write data associated therewith only to said first disk
16 unit; and

17 subsequent to said step of forming a simplex state, copying data stored in said
18 second disk unit to said third disk unit and subsequent to said copying, said second disk control
19 unit accesses said third disk unit, in response to I/O requests from said second computer, re-
20 mapping a disk identifier, said second computer using said disk identifier to access said storage
21 system;

22 ~~wherein said disk identifier is associated with said fourth disk unit before said re-~~
23 ~~mapping and said disk identifier is associated with said third disk unit after said re-mapping,~~
24 ~~whereby said fourth disk unit is accessed when said second computer accesses said storage~~
25 ~~system at a time prior to said re-mapping and said third disk unit is accessed when said second~~
26 ~~computer accesses said storage system at a time subsequent to said re-mapping.~~

1 28. (Previously presented): A method of sharing data according to claim 27,
2 wherein said step of copying data includes steps of:

3 converting a data format of data stored in said second disk unit to another data
4 format; and

5 storing data according to said other data format to said third disk unit.

1 29. (Currently amended): A storage system comprising:
2 a disk control unit; and
3 a plurality of disk units,
4 wherein said disk control unit is operable to form a duplex state between a first
5 disk unit and a second disk unit, wherein data associated with a write request from a first
6 computer is stored to both said first disk unit and to said second disk unit, wherein a third disk
7 unit is accessed to service an I/O request from a second computer,

8 wherein said disk control unit is further operable to form a simplex state between
9 said first disk unit and said second disk unit, wherein data associated with a write request from
10 said first computer is stored only to said first disk unit,

11 wherein during said simplex state, data stored in said second disk unit is copied to
12 a third disk unit and said second disk unit is accessed to service an I/O request from said second
13 computer, and a disk identifier is re-mapped;

14 wherein a second computer uses said disk identifier to access said storage system;
15 wherein before said disk identifier is re-mapped, it is associated with said third
16 disk unit so that said third disk unit is accessed when said second computer accesses said storage
17 system;

18 wherein after said disk identifier is re-mapped, it is associated with said second
19 disk unit so that said second disk unit is accessed when said second computer accesses said
20 storage system.

1 30. (Previously presented): The storage system of claim 29 wherein
2 subsequent to said step of re-mapping, forming a duplex state between said first disk unit and
3 said third disk unit.

1 31. (Currently amended): A storage system comprising:
2 a disk control unit; and
3 a plurality of disk units,
4 wherein said disk control unit is operable to form a duplex state between a first
5 disk unit and a second disk unit, wherein data associated with a write request from a first
6 computer is stored to both said first disk unit and to said second disk unit, wherein data
7 associated with a write request from a second computer is stored to a fourth disk unit,

8 wherein said disk control unit is further operable to form a simplex state, wherein
9 data associated with a write request from said first computer is stored only to said first disk unit,

10 wherein during said simplex state, data stored in said second disk unit is copied to
11 a-said third disk unit and subsequent to said copying, data associated with a write request from
12 said second computer is stored to said third disk unit, and a disk identifier is re-mapped,

13 ~~wherein a second computer uses said disk identifier to access said storage system,~~
14 ~~wherein before said disk identifier is re mapped, it is associated with a fourth disk~~
15 ~~unit so that said fourth disk unit is accessed when said second computer accesses said storage~~
16 ~~system,~~
17 ~~wherein after said disk identifier is re mapped, it is associated with said third disk~~
18 ~~unit so that said third disk unit is accessed when said second computer accesses said storage~~
19 ~~system.~~

1 32. (Previously presented): The storage system of claim 31, wherein data
2 stored on said second disk unit is of a first data format and data stored on said third disk unit is of
3 a second data format.

1 33. (Previously presented): The storage system of claim 32, wherein said first
2 data format is a count key data format and said second data format is a fixed-length block format.

34. (Canceled)

1 35. (Currently amended): A storage system comprising:
2 a disk control unit;
3 a plurality of disk units; and
4 a network connecting at least some of said disk units,
5 ~~wherein said disk control unit is being operable to copy data stored in a first disk~~
6 ~~unit to a second disk unit via said network,~~
7 ~~wherein said disk control unit is being operable to form a duplex state between~~
8 ~~said first disk unit and said second disk unit, wherein data associated with a write request from a~~
9 ~~first computer is stored to both said first disk unit and to said second disk unit, wherein data~~
10 ~~associated with a write request from a second computer is stored to a third disk unit,~~
11 ~~wherein said disk control unit is further being operable to form a simplex state,~~
12 ~~wherein data associated with a write request from said first computer is stored only to said first~~
13 ~~disk unit,~~

14 wherein during said simplex state, data stored in said second disk unit is copied to
15 a third disk unit and, subsequent to said copying, said second computer accesses said third disk
16 unit, a disk identifier is re-mapped,
17 wherein a second computer uses said disk identifier to access said storage system,
18 wherein before said disk identifier is re-mapped, it is associated with said third
19 disk unit so that said third disk unit is accessed when said second computer accesses said storage
20 system;
21 wherein after said disk identifier is re-mapped, it is associated with said second
22 disk unit so that said second disk unit is accessed when said second computer accesses said
23 storage system.

1 36. (Previously presented): The storage system of claim 27, wherein data
2 stored on said second disk unit is of a first data format and data stored on said third disk unit is of
3 a second data format.

37 and 38. (Canceled)